ELSEVIER

Volume 89, issues 1–3, 28 October 2002

Chemical Engineering Journal

www.elsevier.com/locate/cej

Contents

Abstracting Services

This Journal is cited by the following Abstracting Services: BIOSEP Bulletin, BIOSIS, Cambridge Scientific Abstracts, CABS, Chemical Abstracts, Chemical Engineering Abstracts, Current Contents, Engineered Materials Abstracts, Fluid Abstracts, FSTA, INSPEC, Material Business Alerts, Metals Abstracts, Mixing and Separation Technology Abstracts, Pascal/CNRS, Physikalische Berichte, Science Abstracts, Science Citation Index, Theoretical Abstracts.

General

Conditions of thermodynamic equilibrium and stability as a basis for the practical calculation of vapour–liquid equilibria
A. M. Toikka and J. D. Jenkins 1

Modelling of power law liquid–solid mass transfer in packed beds at Darcy regime
J. Comiti, A. Montillet, D. Seguin and M. Hilal 29

Inferential conversion monitoring and control in emulsion polymerisation through calorimetric measurements
J. Zeaiter, V. G. Gomes, J. A. Romagnoli and G. W. Barton 37

Pumping efficiency of screw agitators in a tube
F. Rieger 47

Rheological characteristics of ground tire rubber-modified bitumens
F. J. Navarro, P. Partal, F. Martínez-Boza, C. Valencia and C. Gallegos 53

The effect of composition and temperature on the properties of fly ash- and kaolinite-based geopolymers
J. G. S. van Jaarsveld, J. S. J. van Deventer and G. C. Lukey 63

A study of the reaction pathway upon propane oxidation over V–K/Al_2O_3 catalysts
C. Resini, M. Panizza, L. Arrighi, S. Sechi, G. Busca, R. Miglio and S. Rossini 75

Rigorous design of extended fully thermally coupled distillation columns
Y. H. Kim 89

Cost effective control strategy for small applications and pilot plants: on–off valves with temporized PID controller
A. Restrepo, A. González and S. Orduz 101

(contents continued on page I)

SCIENCE DIRECT™

Full text of this journal is available, on-line from **ScienceDirect**. Visit **www.sciencedirect.com** for more information.

The publisher encourages the submission of articles in electronic form thus saving time and avoiding rekeying errors. A leaflet describing our requirements is available from the publisher upon request

CONTENTS Direct

This journal is part of **ContentsDirect**, the ***free*** alerting service which sends tables of contents by e-mail for Elsevier Science books and journals. You can register for **ContentsDirect** online at: **http://contentsdirect.elsevier.com**

1385-8947(20021028)89:1-3;1-7

(contents continued from outside back cover)

Chemical Reaction Engineering

Bubble size in aerated stirred tanks
S. S. Alves, C. I. Maia, J. M. T. Vasconcelos and A. J. Serralheiro 109

Experimental equipment for high-throughput synthesis and testing of catalytic materials
I. Hahndorf, O. Buyevskaya, M. Langpape, G. Grubert, S. Kolf, E. Guillon and M. Baerns 119

A novel method for measuring the residence time distribution in short time scale particulate systems
A. T. Harris, J. F. Davidson and R. B. Thorpe 127

Kinetic model of one-part curing system with moving boundary conditions
T. Matsui 143

A simple method for systematic synthesis of thermally integrated distillation sequences
G. Sobočan and P. Glavič 155

Application of shape factor to determine the permeability of perfusive particles
B. Albusairi and J. T. Hsu 173

Cinétique de nucléation hétérogène et de croissance cristalline de l'hydroxyapatite lors de la précipitation spontanée des phosphates de calcium dans des solutions sucrées
A. Jourani and T. Bounahmidi 185

Pilot scale deionisation of a galvanic nickel solution using a hybrid ion-exchange/electrodialysis system
P. B. Spoor, L. Grabovska, L. Koene, L. J. J. Janssen and W. R. ter Veen 193

Analysis of gas–liquid mass transfer in an airlift contactor with perforated plates
S. Krichnavaruk and P. Pavasant 203

Preparation of high surface area $La_{1-x}A_xMnO_3$ (A=Ba, Sr or Ca) ultra-fine particles used for CH_4 oxidation
Y. Liu, H. Zheng, J. Liu and T. Zhang 213

Environmental Chemical Engineering

Liquid–liquid equilibria of limonene+linalool+diethylene glycol system at different temperatures
A. Arce, A. Marchiaro, O. Rodríguez and A. Soto 223

Inclined wettable filter for mist purification
I. E. Agranovski, T. Myojo, R. D. Braddock and D. Jarvis 229

Some studies of cadmium adsorption using *Aspergillus niger*, *Penicillium austurianum*, employing an airlift fermenter
Kh. Rostami and M. R. Joodaki 239

A theoretical study of the improvement in performance of double-pass mass exchangers with external refluxes separated by an idealized permeable barrier
C. -D. Ho and S. -C. Chiang 253

Author Index 263
Subject Index 265